**Exercise 5 Git-HOL**

**1. Introduction and Objectives**

After you've created branches, made commits, merged changes, and resolved conflicts locally, the final step is to push your work to a remote repository. This action synchronizes your local changes with the central server, making your work available to collaborators and creating a centralized backup.

**Objectives**

* Clean up any unused branches in your local repository.
* Synchronize your local work with the remote repository.
* Push local changes to the remote repository.

**Prerequisites**

* You have a local Git repository with a remote named origin already configured.
* You have completed the previous labs, so your repository has local branches and commits that need to be pushed.

**Step 1: Verify Your Local Branch is Clean**

Before pushing, ensure your local main branch has no uncommitted changes. This is a crucial habit that prevents you from pushing unfinished work.

git status

The output should confirm you are on the main branch and that your working tree is clean.

**Step 2: Clean Up Unused Branches**

Keeping your repository tidy is good practice. Check to see if any feature branches (like feature-branch from previous labs) still exist.

git branch

If you see any branches other than main, delete them using the -d flag.

git branch -d <branch\_name>

**Step 3: Pull from the Remote Repository**

Always pull from the remote repository before pushing. This ensures you have the latest version of the code and prevents potential conflicts.

git pull origin main

If there are no new changes on the remote, Git will say "Already up to date." If there are changes, Git will automatically merge them for you.

**Step 4: Push All Local Changes**

Now you can push all your committed local changes from your main branch to the remote repository.

git push origin main

You may be prompted for your Git credentials (username and password or a personal access token). After a successful push, all your local commits will be stored on the remote server.

**Step 5: Verify Your Changes on the Remote**

To confirm that your push was successful, open your remote repository's URL (e.g., on GitHub, GitLab, or Bitbucket) in a web browser.

* **Check the commit history** to see the new commits you made locally.
* **Verify the new files** you created in the previous labs are now present.